USC Biomass Facility Public Meeting

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D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

What is “biomass”?

- *Biomass Fuel means*

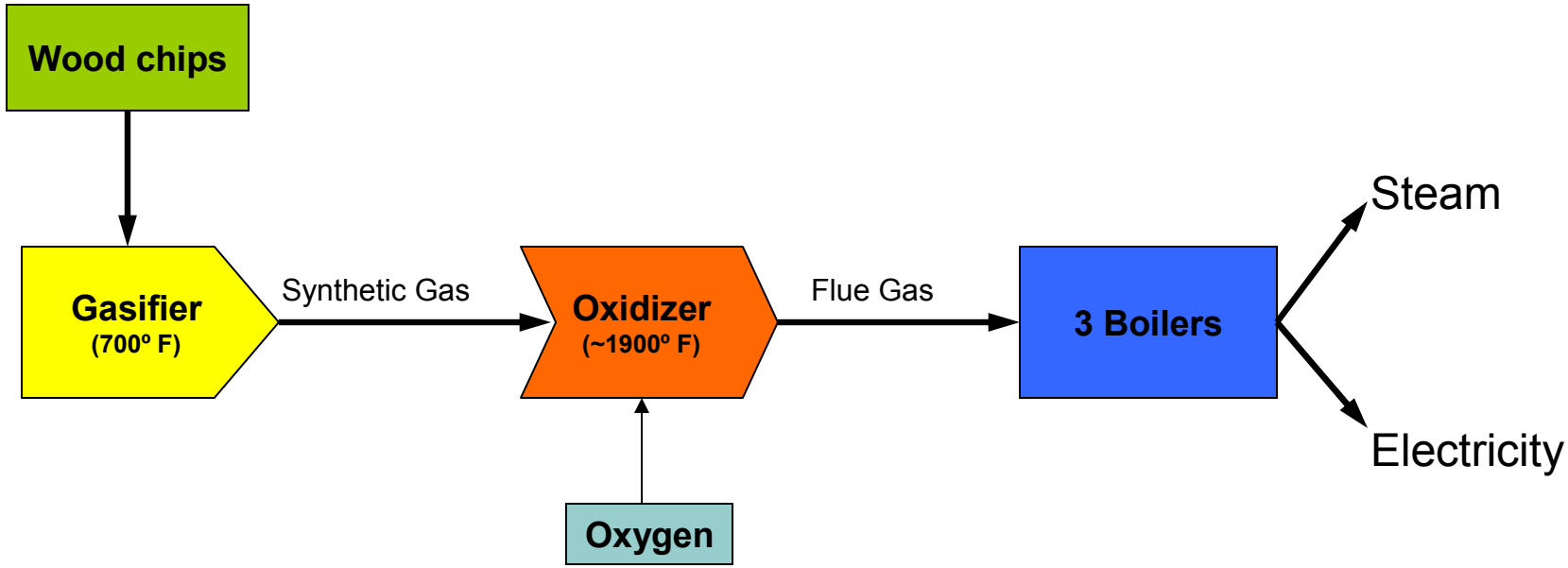
  “unadulterated wood, wood residue, and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sanderdust, chips, scraps, slabs, millings, and shavings); animal litter; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds”

- Source: Environmental Protection Agency (EPA)

What Type of Fuel will USC use?

- "Virgin" wood chips only
  - Chips 3-4 inches in length (on average)
  - No painted or treated wood allowed
  - No construction or demolition debris allowed
  - Chips purchased from saw mills
  - Unloaded and stored inside of facility

Biomass Unit Flow Diagram



USC Biomass Facility

Construction Permit Timeline

- Permit application received 3/25/2005
- Draft construction permit issued 07/15/2005
  - 30-day public comment period began
- Final permit issued 08/16/2005
- Initial construction began 06/26/2006
- Initial operation expected early 2007

What is Air Dispersion Modeling?

- Computerized modeling predicts worst-case pollutant concentrations
  - Required before construction permit is issued
  - Must show compliance with all standards
  - Modeling usually overestimates pollutant concentrations
  - Included all emissions from existing boilers and new biomass facility

DHEC Modeling Results

- First modeling done before construction permit was issued
  - Showed compliance with all standards
- Revised modeling recently completed
  - Addressed issues raised by consultant hired by City Council
  - Used newer EPA-approved model
  - Factored in terrain and public access to campus
  - Predicted concentrations in nearby neighborhoods
  - Showed compliance with all standards, with adjustments

Modeling Receptors

Air Emissions Stack Testing

- Testing required within 180 days after startup of new facility
  - Verify emission estimates used for construction permit
  - Ensure permit limits will be met
- Site-Specific Test Protocol required
  - Public involvement
  - Test results shared with public
- Continuous Opacity Monitor (COM) required

Stack Testing Conducted for:

- Typical products of combustion
  - Particulate Matter (total)
  - Particulate Matter (diameter less than 10 microns (PM_{10}))
  - Nitrogen Oxides (NOx)
  - Sulfur Dioxide (SO_2)
  - Carbon Monoxide (CO)
  - Volatile Organic Compounds (VOC)

What if Emissions are Higher than Estimated?

- Modeling will be rerun to ensure compliance with standards
- USC will install air pollution control device(s), if needed to meet permit limits

Monitoring Done by DHEC

- Monitoring measures area-wide pollutants
- Current monitoring done (at Bates House)
  - Total suspended particulates (TSP) – samples collected every 6 days
  - PM_{10} - samples collected every 6 days
  - $PM_{2.5}$ - samples collected every day
- DHEC will install continuous monitor this Fall
  - PM_{10} – 1-hr measurements available
  - Near real-time readings via Internet (2-3 hour delay)

How will DHEC Keep You Informed?

- Public website (under development)
  - Permit information
  - Presentations
  - Test results
  - Monitoring data
  - Other?
- Quarterly monitoring summary reports

Questions